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A Botanic Garden for the City of New York.

THE daily papers have been discussing lately the possibility of establishing a botanic garden in this city. The movement certainly has not been made too soon. Botanical and zoological gardens form a part, and a very important part, of the educational equipment of a great metropolis; and it is not creditable to the people of this city that it is allowed to fall so far behind the other great commercial centres of the world in this respect. A thoroughly well-equipped and well-maintained garden, carried on upon the principles which should govern such an establishment, can exert a wonderful influence in developing and stimulating the intelligence of the public, not only by increasing the knowledge of plants and plant-geography, but of all that relates to horticulture and gardening.

A good garden, however, is not an easy thing to establish. It must be something more than a mere collection of growing plants; it cannot serve its purpose, indeed it cannot be administered, unless the living collections are supplemented by a herbarium and library, without which no garden is worthy of the name. A museum, too, in which the products of all plants can be grouped, while not essential for the administration of a garden, is an attractive and valuable educational feature, which should be provided for in any comprehensive scheme of this character.

There are two reasons why botanical gardens fail to accomplish what is expected of them, and why, from the point of view of popular instruction, there are so very few useful ones. Few persons realize what a very large sum of money it costs to found and maintain a great botanical establishment, and the gardens of the world which are adequately supported with proper endowments may be counted upon the fingers of one hand. The second reason why such gardens fail is found generally in the difficulty of securing men in whom scientific attainments are joined to great administrative capacity to manage them. The man who successfully conducts a botanical establishment, capable of influencing the intelligence of a great metropolitan population, must possess qualifications of the highest order, and an enthusiasm for his work which will enable him to resist the temptations of more lucrative employment, and the opportunity of more immediate influence, which the attainments and character of such a man are pretty sure to bring to him. The gardens at Kew, near London, are what they are to-day—the finest botanical establishment in the world—not because they have been lavishly supported by the British government, but because, through circumstances unprecedentedly favorable, they have been controlled for three generations by men eminent in scientific attainment and administrative ability.

We call attention to these facts, not because we are not heartily in favor of the establishment of a botanical garden in this city, but in order that the people of New York may realize that it is no easy matter to secure a good one; that a good deal of money will be needed to support it; and that the proper man to direct the expenditure of this money must be something more than a good gardener or a successful florist, if the garden is to accomplish what is expected of it.

A garden, to be successful, like any other museum, must be disassociated entirely from politics in order to secure for it a continuation of management in the same hands. This is essential. The botanic garden of New York must be carried on without any reference to politics, and if this cannot be done the scheme had much better be abandoned at the outset. There is no need of any more botanical gardens in the world run for the purpose of supplying bouquets and dinner-table decorations for the politicians who control the appointment of the managers; or to serve as a means for advancing commercial or private interests.

The question of a site for a botanic garden in the city of New York presents some difficulties. There are certainly nowhere in the Central Park thirty or forty acres that can be spared for this purpose, or which are suitable for it. It has been urged that a garden in one of the new parks would be too remote from the great mass of population to be useful, but it would not be more remote from the centre of the city than the garden at Kew is from the centre of the London population, which, during some pleasant afternoons, is visited by more than a hundred thousand people. There is an advantage, too, in having the garden as far as possible from the dust and smoke of the city, which must in time influence Central Park unfavorably, and which is almost fatal to a good garden. It is probable, therefore, that if New York ever has a botanical garden at all proportionate to its size, it will have to be located in or in connection with one of the new parks, and whether such a garden is established in this century or not, a proper site should be provided for it in any scheme which may be adopted for their improvement.

There seems to be no reason now why such a garden might not be carried on under the control of a board of managers, in the same way that the Museums of Art and Natural History are controlled, or by the trustees of Columbia College, either independently or forming part of a larger board. Columbia College already owns a very large and valuable herbarium, and a very considerable botanical library. These, in order to avoid duplication, might very suitably serve as a nucleus for the new establishment. The Museum of Natural History contains a special collection, the magnificent gift of a public-spirited citizen of this town, which might well be the foundation of the new museum, and which would give to it at once a character possessed by no other botanical museum in the world.

But what the situation requires, if the desire for a botanical garden really exists in this community, is that some man of wealth, influence and public spirit, fully alive to the importance of making New York a metropolitan city in the truest sense, should appear and gather together the material already available, raise the funds necessary for the establishment, and secure from the city a suitable location, and such co-operation as may be necessary. When this has been done, and the man who can organize and carry on

such a garden has been secured—and the demand will sooner or later find or develop him—New York will have a botanical establishment worthy of its intelligence and wealth, which will instruct and enlighten its people and make its influence felt for good from one end of the land to the other. The man or men who can accomplish this will, we believe, be as worthy of the honor and gratitude of the citizens of New York as any who have given their time and money for its improvement and advancement.

Fruit and Vegetables under Glass.

A SCORE of years ago fresh fruit and vegetables grown under glass were hardly to be found in any abundance or variety in the winter markets of our great cities. Enterprising gardeners there were in private places who were ambitious to prove their skill by furnishing home-grown Asparagus and Green Peas for the Christmas dinner; but unseasonable delicacies of this sort rarely, if ever, found their way to consumers from commercial growers through the ordinary channels of trade. It is true still that many of the choice grapes, nectarines, peaches and strawberries for city tables come from green-houses that are not strictly commercial. It often happens that in private places fruit and vegetables are produced in excess of the family needs, and the surplus is sold to the city dealer. But, aside from this somewhat irregular traffic, the growing of winter fruit and vegetables of nearly every variety for market has become an important industry, and a rapidly growing one in spite of the fact that facilities for transporting perishable products from warmer climates are multiplying and improving every year.

Cold-frames and pits which were originally used to lengthen out the season in autumn and hasten the coming of spring, were very naturally succeeded by cool houses, which offered every advantage given by the frames, with much greater convenience. But an apparatus for heating such houses will not alone suffice to insure a crop of winter vegetables. Special experience and skill are required if any profit is realized, for one may be an expert in growing Tomatoes, for example, out-of-doors, and still be unable to persuade his plants under changed conditions to set any fruit. For a month past hot-house tomatoes have been in strong demand here at sixty cents a pound, wholesale, and this is not an uncommon price. They have sold in this city at a dollar a pound when tomatoes fresh from Havana were bringing seventy-five cents a peck. This means that hot-house tomatoes have a genuine value, which comes from superior quality—for this difference in price cannot be entirely due to a mere fancy—and that the skill to grow them well is not generally possessed by market-gardeners—or they would be more abundant. The best growers now can produce beautifully colored, well-flavored, and solid, ripe tomatoes for winter marketing within three months from the day the seed is sown. To accomplish this, varieties specially adapted to culture under glass have been originated, with size and habit of growth that insure the greatest amount of fruit in a given space—that is, with a given amount of fuel. Expedients have been devised for insuring fertilization so that the plants may set fruit well down to the ground. In short, the needs of the plant under artificial conditions have been so thoroughly studied, that a good winter crop of tomatoes can be looked for with greater certainty than can a good field-crop in the summer.

But even when all this special knowledge becomes common property, and when competition is sharpened by a growing demand, choice fruits and vegetables out of their season will continue to be classed among luxuries. There are other crops which require even greater skill for profitable production than the tomato. This is especially true of some of the tree-fruits which necessarily occupy a large space and are most exacting in their demands for special attention throughout the entire year. Some of them at flowering time even show a preference for a particular kind of insect to help them in the distribution of their pollen. Peaches and nectarines at six dollars a dozen, grapes at five dollars a pound, with strawberries at five dollars a basket (and very diminutive baskets have been selling at that rate on Broadway within a week), are expensive articles of food, but, from the grower's point of view, these prices are not exorbitant at certain seasons of the year. And a vegetable as easy to force as asparagus may well command two dollars or more a bunch, because the plants must be cared for three or four years before they are strong enough to produce shoots of proper size, and after one season's use under glass they are practically worthless. Mushrooms at a dollar and a half a pound, green peas at a dollar for a scant pint when shelled, snap-beans worth enough to be sold by a count of the pods, are paying crops only when carefully grown. Even at these high prices, every foot of space must be employed, with a crop of one kind coming on between the rows of another as it becomes fit to market, and with a plant ready always to occupy every place made vacant by the removal of another. One grower in Jersey City, who has 25,000 square feet of glass devoted to Radishes alone, and who is prepared to deliver 12,000 bunches a week, considers it an unsuccessful season when he cannot market five crops between the 20th of September and spring weather.

A few years ago these expensive fruits and vegetables were found only in the shops of a few retail dealers in fancy fruits, but now the call for these products has so increased, that nearly every variety of garden-fruit and vegetables can be found among the regular consignments to wholesale dealers. And it may be added, that certain other fruits and vegetables can rarely be found here, except when grown under glass. The long cucumbers, so highly prized by some people, will only develop to advantage when an almost tropical climate is provided for them. Certain varieties of European strawberries, with a flavor greatly relished, are among the best for forcing, although they refuse to flourish in our gardens. It is well known that the varieties of Potato most highly prized in England will come to nothing here under out-door cultivation, and an enterprising marketman near this city has now growing in his green-house some Ash-leaf and Walnut-leaf Kidneys, in the hope that some one will pay him a dollar a pound for his tubers, on account of their supposed nutty flavor, or because they are strictly English.

After all, imagination may help to give an inflated value to these fruits out of season, and families of moderate means need not lack for wholesome and toothsome vegetables at any season, thanks to cold storage, quick transportation and approved methods of preserving. And there are old-fashioned people who entertain the very old-fashioned idea that no fruit or vegetable is ever really pleasing to the taste except in its proper season.

Christmas in the Pines.

THE Holly and Mistletoe naturally take the first place as decorative plants at Christmas time, as they have been from time immemorial identified with this festival; and at this season the Holly's "armed and varnished leaves" and clusters of bright red fruit are at their best, and so are the clear white waxen berries of the Mistletoe interspersed among its thick pale-green leaves.

But there are many other charming plants to be found in the Pines that can be used with even better effect than these. The Laurel is much more easy to handle than the Holly, and its glossy green leaves are quite as beautiful, and they can be lighted up with clusters of the bright scarlet berries of the Black Alder, which can be found in abundance in the damp barrens. The large, thick, shining leaves of *Magnolia glauca* can also be put to effective use with other foliage where extensive decoration is required. The deliciously fragrant Wax Myrtle should not be neglected. The glossy leaves as well as the thick clusters of pearl-gray fruit make it one of the very best plants to group among the scarlets of the Holly and Alder.

Some of the smaller shrubs, too, are now invested with a rare beauty which seems more striking since the foliage of so many of their neighbors has faded and fallen; and this is

especially true of the little Leiophillum, whose small shining leaves are clustered thickly at the ends of its branches; while among the larger trees the Cedars and Pines have more to offer than boughs of dark green foliage. The bright gray fruit of the one and the symmetrical cones of the other are invaluable for giving character to decorative work.

Where heavy massing is not desired, evergreen vines like *Smilax Walteri* have a grace that is unrivaled, although it requires some resolution to penetrate the thickets where it hangs out its clusters of coral-colored fruit. The common Greenbrier (*S. rotundifolia*) is also beautiful now, being evergreen here, abundant and loaded with blue-black berries. The trailing stems, evergreen leaves and brilliant fruit of the larger Cranberry (*Vaccinium macrocarpum*) are not to be neglected. The running Swamp Blackberry has been mentioned before in these notes, but the delicate veining and exquisite color of the leaves upon the slender and flexible vine when hanging in festoons against a light background seem the perfection of dainty grace.

The aromatic Wintergreen is also here in the greatest profusion, and its leaves have now taken on various colors which harmonize well with the cheerful red of its berries. The Prince's Pine (*Chimaphila umbellata* and *C. maculata*) are among the very best of the smaller plants for decoration, especially the latter, the leaves of which are variegated with white, while at Christmas time a rosy tinge is added. Nothing can be more beautiful than groups of these little plants mixed with the deep-green Laurel.

Several species of Club-moss (Lycopodium) grow in the Pines, and these can always be used to good advantage. Their flexible stems are easily managed, and their foliage retains its fresh look for a long time.

Groups of dry seed-pods are also effective scattered here and there among the evergreens. The pretty urn-shaped seed vessels of the Meadow Beauty (*Rhexia Virginica*), with many others that may suit the fancy, are now found in plenty. Surely the Pines offer abundant material for Christmas decoration, but the beauty and grace with which the Pines themselves are adorned is indescribable. *Mary Treat.*

Vineland, N. J.

Florida Oranges.

THE present orange crop in Florida is twice as large as the last, and it is a matter of no little solicitude, with all who are interested in orange growing, to know how the markets will bear the additional strain. The last crop sold at satisfactory prices, many northern dealers coming to Florida to buy the fruit, both in the groves and in the auction market at Jacksonville. A home market is the ideal of the orange growers, but it is not likely to become permanent, because the producers will not unite on any one plan of action, but persist in sending their fruit, each for himself, to hundreds of commission houses in the north and west, so that buyers stand the best chance of getting fruit cheap by staying at home. Shippers, as a rule, expect much better returns than they receive under the commission system. Dealers who solicit fruit to sell on commission are prone to hold out flattering inducements, which are too readily believed, while those who come to buy on the ground have to pursue the reverse policy, since they assume all the risks, while the commission merchant throws all the risks on the shipper.

None realize the evils of the commission system better than the Florida orange growers; yet nearly all of them continue to dispose of their fruit in this manner year after year, simply because they will not unite upon some one definite plan of action, by which they might prevent gluts at centres of distribution and needless depreciation in prices. What is still more important, a wider and more equable distribution of fruit could thus be brought about, which is the only effectual way of counteracting the effects of overproduction. There would be no cause for present apprehension on this score if the product of the Florida growers could be marketed in summer, but, unfortunately, it is in its prime in Winter. In November the fruit is not strictly marketable. If left on the trees till spring much waste results, and in the counties north of Orange Lake there is about one chance in three of losing the entire crop by frost. No reliable means of preserving the fruit fresh, after it has been picked from the trees, is known, except by cold storage, which is probably too expensive, and when taken out of cold storage houses fruit is said to go down quite rapidly. Californian Oranges have the advantage of being late in ripening, not being marketable until spring. It seems advisable that late varieties should be sought for and largely planted in southern Florida.

At present a movement is on foot to open up European markets for Florida oranges. Considerable fruit was sent to England last winter, and the returns were quite satisfactory. This season a company in New York has taken up the business of shipping Florida Oranges to Europe, and the results will be watched with much interest. It appears that Mediterranean fruit does not come into market before January, and hence, that there may be good demand for Florida fruit through December, and perhaps later. The danger to be apprehended is that much immature fruit, shipped in November, may create a prejudice at the outstart which will be damaging. This evil is experienced every year in the American market, as a result of picking fruit before it has acquired proper color and flavor, even as early as in October. Despite persistent warnings through the Florida papers, many persons will begin shipping as soon as the yellow hue makes its appearance on the fruit. It sells well for a few weeks, till the public has had a taste of the fruit, and then comes a reaction, from the effects of which the market does not recover before Christmas week.

Many advocate the selling of Florida oranges by auction in northern cities, while some oppose it. This system has been pretty well tested, but the average returns have not differed materially from those received from commission merchants; so the latter may be said to remain masters of the situation. It should be observed that the leading orange growers, who have established a reputation for their fruit and have selected reliable agents to sell it, have a great advantage over others and realize much more satisfactory returns. Orange growers of this class can hardly be induced to join themselves to any general organization, and this fact is, perhaps, the greatest impediment to any effort at combination. Those who are naturally looked to for leadership will not respond, and a co-operative movement that lacks their indorsement is looked upon with distrust. It will be seen that there is something lacking to make orange growing all that fancy has painted it, and that while the lack may be supplied, it is much easier to prescribe the remedy than to apply it. Possibly something may be evolved from the experience of the present season which will tend to advance the industry in the estimation of those who would not follow it merely from æsthetic considerations. *A. H. Curtiss.*

Jacksonville, Fla.

Foreign Correspondence.

London Letter.

FOLLOWING on a summer which was remarkable for the absence of sunshine and heat, we are experiencing a November of exceptional warmth and openness. Primroses, the harbingers of spring, are flowering in the hedge-rows and copses almost as freely as if it were March; Violets are equally abundant; while the hardy Cyclamens, Christmas Roses, winter Heliotrope, and many other plants which usually sleep hard till January, are in full bloom. Not only the flowers, but also the birds, are deceived by the weather, and thrushes sing as lustily as if it were pairing time. Many deciduous trees and shrubs still retain their foliage; bedding plants, such as Verbenas, are still healthy and flowering. Truly this has been a very mixed year in regard to weather.

Primula capitata is the sweetest herbaceous plant now in flower. Its normal flowering time is May or June, but it appears to have been affected by the weather in the same way as the common Primrose. As a plant for an unheated greenhouse it occupies a foremost place here. I have a bunch of its purple, compact heads of flowers before me as I write, and their powerful odor, Hawthorn-like, fills the whole room. Some of the heads are fully two inches across and contain about a hundred blooms and buds, the latter, occupying the centre, and covered with white meal. The stalks are nine inches high, rising from the centre of a tuft of healthy foliage, not unlike that of *P. vulgaris*. It is Himalayan, and comes freely from seed. The pretty, white Zephyr flower (*Zephyranthes candida*) is in full blossom in a sunny border out-of-doors. It is the only species that is happy in the open border in the neighborhood of London. The other kinds, especially *Z. carinata*, are in great favor here as summer-flowering green-house plants.

Cyrtanthus lutescens and *C. Mackenii*, although not the brightest in color nor largest in flower, have proved much the most useful of the dozen or so species which have been cultivated here at one time or other. The genus is one of the hardest of the Cape genera of bulbs to grow successfully in Europe; but the above are exceptions, as, for the last two years, they have grown and flowered most freely at Kew

under very simple treatment. They are scarcely ever out of bloom, and just now they are unusually good, which is a point greatly in their favor when considering their claims as garden plants. *C. lutescens* has leaves a foot long, half an inch broad, green and fleshy; the scapes are a foot long, each bearing an umbel of from six to nine flowers of a soft lemon-yellow color which are one and a half inches long, narrow tubular, the six short segments reflexed, the stamens as long as the tube, the style a little longer. Each flower keeps fresh over a month, so that for bouquet, and like purposes, they would prove of great value. *C. Mackenii* is similar, but pure white, the tube slightly bent, and the segments not reflexed; the flowers measure nearly one inch across. In a cool green-house, with the same treatment as suits Vallota, these two plants are certain to prove successful.

Hippeastrum aulicum.—Everybody is looking after the new and flashy hybrid Amaryllises, but no one appears to care for the species. And yet some of them are first-rate flowering plants, with plenty of color attractions. Such a one is the above, and when one recollects that this and *H. reticulatum* are the only two which bloom before Christmas, its claims as a garden plant are undoubted. There are some fine examples of it in bloom at Kew now. They have plenty of full sized foliage (another good point), the scapes are stout, nearly two feet high, and bear each two flowers, six inches long and six inches across, of a deep crimson color, with darker shadings, and a green star at the base inside. The flowers have been open a fortnight and are still good.

Orchids.—We have as many named varieties of *Lælia anceps* as of *Cattleya Mossiæ*, and some of them are as much alike as two peas. There are good, well-marked varieties, also, and we do not seem to have reached the end of them yet, for the Orchid of the week is a very beautiful and distinct variety of *L. anceps* which has flowered with Mr. Sander at St. Albans, and which he has named Amesiana, after Mr. Ames, of North Easton, Massachusetts. The width of the flower is four inches; the sepals, one-half inch broad, narrowed to a long point; the petals, one and one-half inches broad, also long-pointed; both sepals and petals are ivory-white, tipped with rose-purple. The labellum is smaller than in the type, the lateral lobes are incurved, white, with lines of red inside, the front lobe small, narrowed almost to a stalk at the base, and colored rich maroon-purple. There is also a very prominent ridge-like crest running from the front lobe into the throat which is colored bright yellow. This variety is considered the equal in beauty of *L. anceps Dawsoni*. Its value is shown by the price paid for it by Mr. Sander—200 guineas—although, in 1883, this same plant was purchased from Mr. Sander for two guineas; but it had not then flowered. Another addition to the list of sensational Orchids, *Odontoglossum Schræderianum*, is also in flower in the St. Albans nursery. It is an unusually stately plant, standing between two widely distinct species, *O. Karwinski* and *O. læve*. It resembles both in growth, and has a long paniculate inflorescence; each flower measures three inches across, the sepals and petals are one and one-quarter inches long, one-half an inch wide, pointed, spreading, the three upper ones curved upwards, the two lower curved down and inwards; they are colored yellowish-white, with large and numerous blotches of purple. The lip is pandurate, an inch long, nearly as broad, the basal half a bright crimson, the apical half pure white. It is a remarkable and handsome species, certain to become a popular Orchid for the cool house. It was introduced and flowered in 1887.

Odontoglossum Harryanum has bounded into the very front rank of Orchids. It is a most delightful plant, full of charming variety, quaint and attractive in form, fantastically yet richly colored, and, withal, as easily grown as *O. crispum*, and almost as cheap. A good garden plant ought always to be abundant and cheap. The plant of *O. Harryanum* which first flowered had but two blooms, and those not of the best, yet they made the eyes of Professor Reichenbach twinkle with delight when he saw them (he was staying at Kew at the time). But we have now spikes with eight, nine and eleven flowers, and collectors say there are even more. A fine variety with eleven flowers on the spike is now in bloom at Kew.

Masdevallias are general favorites in England, even the small "botanical" species finding many admirers. At Kew we have over eighty species, about a dozen of which are in flower now. Three of the most remarkable are, *M. macrura*, a large-flowered, long-tailed species, the sepals united at the base and forming a shallow cup, one inch across, and then separating into three narrow tails six inches long. Inside there are lines and warts of a purplish color, the rest of the flower being yellowish green; the petals and lip are very diminutive. The leaves are one foot long, two inches across, thick and leathery. The peduncle is as long as the leaves. *M. Mooreana* is another large flowered kind belonging to the Peristeria and Coriacea group. The sepals form a cup one inch across, with a prominent chin; they then separate into three projecting tails three inches long, the lower ones united by their inner edge and then turned outwards; these are purple, the upper one being yellow with purple lines. The lip is large, tongue-shaped, and colored dark purple. Leaves are six inches long, one and one-quarter inches wide, thick, fleshy, and very dark green. The last of the trio is *M. pulvinaris*. It is a very singular species, quite distinct from any other cultivated Masdevallia. The scape is one and one-half feet high, purple, clothed with close-fitting bracts and covered with a whitish scabridity, rough as sandpaper, but slightly glutinous. The flowers are produced on the upper six inches of the scape, about a dozen on each scape. They are an inch apart, and each one is an inch long, reversed, so that the labellum is uppermost; the two upper sepals are united and form a boat-shaped hood. Inside they bear two oblong, fleshy, yellow, cushion-like processes, the object of which is not clear; the lower sepal is concave and as long as the upper ones. Color purple and dull yellow. Botanically, this Orchid is the most interesting plant now in flower at Kew, but its lack of bright color will prevent it from ever becoming a popular garden plant.

Cattleya Gaskelliana is worth growing as a market plant, or, at all events, for the sake of its flowers, which are deliciously fragrant, beautiful in form and color, very freely produced, and at their best in October and November. In Messrs. Low & Co.'s Nursery at Clapton there are many thousands of this Orchid, occupying a very large house, and from them bushels of bloom have been cut and marketed this autumn. The species is very easily managed, as easily as *C. Mossiæ*.

Disa racemosa.—There are only two good garden Disas, namely, the superb old *D. grandiflora*, of which every garden possesses, or should possess, dozens, and *D. racemosa*. This is a recent introduction, but it bids fair to become a popular Orchid. It is easily grown, requiring the same treatment as *D. grandiflora*, and blooms abundantly in spring. Each growth produces one or two tall spikes, each bearing from six to twelve deep-rose flowers, which last three or four weeks. It is a native of the east side of the Cape.

Vanda Amesiana is a delightful plant, of which little is known yet, but quite enough to satisfy one that it will prove a first-class garden Orchid. It was introduced and flowered by Messrs. Low & Co. in 1887, and a second imported one in excellent health has recently arrived. The narrow fleshy leaves are six inches long, the erect crowded spike of flowers, each one and one-half inches across, with pure white sepals and petals, and a large rosy-red lip; these give this species a character distinct among Vandas. It is also easily grown if placed in the same house with Phalænopsis.

London. *W. Watson.*

New or Little Known Plants.

Syringa villosa.

AN account of this beautiful Lilac, of which an illustration appears upon the opposite page, was published upon page 222 of this journal. It is a native of northern China, and the plant from which our illustration was made was raised in the Arnold Arboretum from seed sent from Pekin by Dr. Bretschneider. *Syringa villosa* is a vigorous and very hardy shrub, now five feet high here, by as much through the branches, with stout, erect, pale brown shoots, marked with white spots, broad and ample pale green strongly reticulate-veined leaves, and narrow, and rather obtuse, often interrupted clusters of pale rose or flesh-colored flowers, which are decidedly less fragrant than those of the common Lilac. They appear here towards the end of May.

S. villosa is a valuable and desirable addition to gardens. The only drawback which it has yet developed as an ornamental plant is found in the fact that its leaves fall very early, or after the first frost, without any change of color.

Our plant seems identical with the one recently figured in the *Revue Horticole* (November 1st) under the name *Syringa Emodi rosea*, which has flowered in the *Jardin des Plantes*, in Paris, and was raised from seed sent also by Dr. Bretschneider. As was pointed out in the description already referred to, the *S. Emodi* of the Himalaya, in spite

of slight differences of habit and of the form of the leaves, is probably not distinct from the north China plant, so that the name *S. Emodi* should, if this view is adopted, disappear in the older name of *S. villosa.* *C. S. S.*

Fig. 83.—Syringa villosa.—See page 520.

Cultural Department.

Autumn Apples in New England.

AMONG the autumn apples, the Gravenstein is now decidedly taking the lead throughout the southern half of New England, as the Duchess of Oldenburgh does in the northern half. There is no comparison between the dessert quality of these two apples, the German being altogether superior to the Russian. Yet it is a fact that there is scarcely any difference in their market price. I have been interested in following the market quotations, and find that only for shipping to England does the Gravenstein lead, and this mostly when grown in Maine. The Maine Gravensteins are so much superior in keeping quality that they may be almost rated as early winter apples. Close to the Gravenstein in popularity with buyers comes the Porter, but this is an apple that bruises so easily, and is injured so greatly by bruising, that it can only be grown profitably for a near market. The Gravenstein was brought into New England from Belgium early in this century, and first propagated in Byfield, Massachusetts. No foreign apple ever achieved a more rapid or better deserved popularity in America. It is one of the very few fall apples of good size, fine appearance and high quality, that can be handled, kept and transported without injury. These merits have given it a position alongside the Hubbardston in the Boston market. Yet there are many other fall apples grown and highly valued for home use. High among these is the Mother, which ripens in October, though its season extends up to and beyond the holidays. Truly, as Cole says, "The Mother has no superior, and very few equals." Yet it is rarely on the street stands, and is hardly known except among old New England families of rural origin or affiliations. The Gravenstein and Hubbardston have gained the lead upon the Mother as a market fruit, notwithstanding its good size, handsome appearance and surpassing quality. Perhaps the chief reason for this is that the Mother, as Downing notes, is "rather too tender for shipment." This apple originated in Bolton, Massachusetts. Next to the Mother comes the Garden Royal (native of Sudbury, Massachusetts), of which Cole says truly, "Nothing is superior," though he adds, "rather small for market." Yet we find it, with Mother, in the best fruit stores, patronized by the old families, and in the gardens of many farmers, though usually but a single tree. It is produced in great perfection about Portland, Maine, and there I have seen it on the stands oftener than in Boston. Garden Royal is about the size, form and color of Fameuse, yet they are easily distinguished by the eye.

The Fameuse is a standard variety in the Boston market, where it goes by the name of "Snow." Being a good shipper, it comes from many directions, and is everywhere for sale about Thanksgiving time. It is grown up to the northern limits of New England, where its season extends to and beyond New Year's day. It is a handsome, delicate apple, with a delicate, peculiar flavor, everywhere recognized and liked, though it is by no means a rich or aromatic apple. The tree is hardy and productive, but the fruit is liable to spot in unfavorable seasons and localities, sometimes to the extent of making the whole crop unmerchantable. This apple is popular, and as commonly grown in Connecticut and Rhode

Island as elsewhere in New England, but the best and fairest fruit comes from the Champlain valley and islands. The Fameuse is of Canadian origin, and Canada has produced a vast number of seedlings from it, some of which, though little known, surpass it in many points. These seedlings are now being made better known, and somewhat disseminated, through the efforts of the Montreal Horticultural Society.

Connecticut's best contribution to our list of fall dessert apples is the Mexico, which is pretty well distributed in the east, yet not largely grown for market. This is a small red apple, much in the style of Fameuse, with tender flesh and a fine, high flavor. Origin, Canterbury, Connecticut.

In New Hampshire Jewett's Fine Red (Nodhead) takes the lead as a fall apple everywhere, both for home use and market. Like the Fameuse, it can be kept into the winter, but does not long retain its remarkably fine, delicious, aromatic flavor. This apple is also well distributed in southern Maine and Vermont. Origin, Hollis, New Hampshire.

The Winthrop Greening is a native fall apple, held in very high esteem in western Maine. It is large, golden yellow, with slight russet and a tinge of red in the sun. This apple has a tender, crisp, and very juicy flesh, with a sprightly, luscious flavor, mildly tart. Its reputation seems to be strictly local.

But the great native fall apple of southern New England (extending somewhat into the winter along the northern range) is unquestionably the Hubbardston Nonesuch, of Massachusetts. Truly does Downing declare that this Apple is worthy of extended culture; and it has attained it. The Hubbardston is found in nearly every orchard in southern New England, but unfortunately its northward range is not so wide as we could wish. It is a failure in most parts of Vermont and New Hampshire, and succeeds only in south-western Maine. A fine, large, roundish, oval apple, striped and splashed with two shades of red, with yellow, juicy, tender flesh, mingling sweetness with sprightly acidity, it is well entitled to class with the best, in our lists. It also has the qualities needed for a great market apple, the tree being vigorous and productive, and the fruit firm enough for transportation.

In northern New England the Duchess of Oldenburgh is planted everywhere, and produces fruit superior in size, beauty and quality to the same variety grown further south. Yet there is only a day or two in its existence when it can be classed as even a tolerably good eating apple. With cold storage it can be kept till Christmas, and this long-kept fruit, losing no beauty, gains considerably in quality, so that it brings good prices.

A favorite fall apple in the cold north-west, for home use, is the Peach of Montreal. This variety is worthless for shipping, as it will not improve if prematurely gathered, while if allowed to mature on the tree it bruises with the slightest touch. The tree is vigorous and productive, and the fruit one of the most beautiful grown, having a creamy skin with a lovely pink blush in the sun. The size is medium to large, form conical, flesh white, delicate, very soft, juicy, subacid, and pleasant in flavor, without much aroma or distinctive taste.

Lyman's Pumpkin Sweet is, I think, the most widely grown and popular among the Fall Apples of this class. The tree is vigorous and productive, and the fruit is especially fine for baking.

T. H. Hoskins.

Newport, Vt.

A Garden of Chrysanthemums.

A NOVEMBER garden, even if filled with the most obscure flowers, would make a very satisfactory ending of the out-door season; but the illustration on the opposite page, from a photograph taken in late November, dimly sets forth what even a small garden can show at that season in the way of Chrysanthemums, which certainly have no rivals among autumn flowers.

Those shown at the side of the house (with the exception of a few pots useful for filling vacancies) are grown where they bloom, and at approach of frosty weather are protected by cold-frame sashes resting on temporary framework. If the weather is very severe, a canvas curtain is dropped in front, and the window of a warm cellar in the rear is opened to temper the air. If kept dry, plants in such a position are seldom injured, in this latitude, before their blooming time is naturally over. The main portion of my collection, some 250 plants, is, however, more thoroughly protected from frost and winds by the tent shown on the right of the picture. This has a ground area of twenty by thirty feet, with fourteen feet ridge, two masts and six feet walls. It is made of sail-duck and is strongly roped. It is easily raised over the plat by five men in as many minutes when the usual early October frost threatens. The walls are clewed up in pleasant weather, and the plants have as cool treatment as is consistent with safety. The heat is supplied by a Hitchings Base Burner located in the cellar, with a two-inch wrought iron flow and return pipe running around inside the lower base of the walls. With this arrangement the plants passed through two nights this season, with an outside temperature of 20° Fahrenheit, uninjured, and much sharper weather would probably injure none but a few in the centre of the plat. I cannot see that the light in the tent is prejudicial to the coloring of the flowers. The walls are up every fine warm day, and the flowers have a certain amount of strong light in any case. If any flowers are affected they are the pinks, which perhaps come a little lighter in the centre of the tent. Ventilation is somewhat self-regulating, as the wall hooks on the roof under a curtain, leaving open spaces which have to be pinned up when the weather becomes severe.

It is no great trouble to grow Chrysanthemum plants, and I have no general cultural theories to explain. I leave home at eight o'clock in the morning and return at seven in the evening, I keep no gardener, and yet find no difficulty in caring for 400 Chrysanthemums, besides a considerable collection of hardy perennials and other garden plants. My purpose is to grow a large crop of good flowers with the smallest outlay of money and labor.

My practice is to plant out the slips (with a strong stake to each) as early in May as possible, in double rows, say eighteen inches apart each way, with a thirty-inch space between the double rows. For my very heavy soil a liberal supply of horse-manure and bone-dust under each plant affords the needed nutriment. The plants are in no way coddled at any stage, the care being about the same as that given to a crop of Corn. The ground is cultivated several times and kept loose until the surface roots appear, when a mulch of manure is given. Chrysanthemums are very impatient of surplus moisture at the roots (no plants more so), and the object being to produce stocky plants with short joints, they are seldom watered at the roots during a normal season unless they show signs of being dry.

Discretion must be used in reading these signs, as some plants with drooping foliage, like Soleil Levant, always appear to lack moisture. Water is usually applied overhead to keep the foliage fresh and to induce breaks. My plants are never "stopped," as they almost invariably produce more stems than are needed, and, besides this, I prefer to have them throw their blooms high. If plants are frequently stopped, one cannot pluck stems two or three feet long, which add so much grace to the cut flowers. In August the plants are gone over and tied up thoroughly, in anticipation of high winds, and to avoid restaking the stakes are cobwebbed together with strong twine. When ready to show, rails are run between the double rows and the plants tied closely and securely back. The aisles seem narrow, yet several thousand people passed between them last season without injuring a plant. Disbudding is the nice art of Chrysanthemum culture, and is a matter of experience and judgment. In a general way, I prefer to remove all but one bud, preferably the crown bud, from each stem. However thoroughly one disbuds, he will wish before the end of the season that he had removed a few more, for only in this way can fine, characteristic flowers be had. Of course there are exceptions. One reads in the papers frequently of some one who prefers the flowers in all their natural luxuriance, but, in actual practice, I find that visitors universally appreciate the best productions. Six, seven and eight inch flowers are no rarities now, and many of these are as refined as the smaller ones, if not overdone in the culture.

John N. Gerard.

Elizabeth, N. J.

Ferns for Cutting.

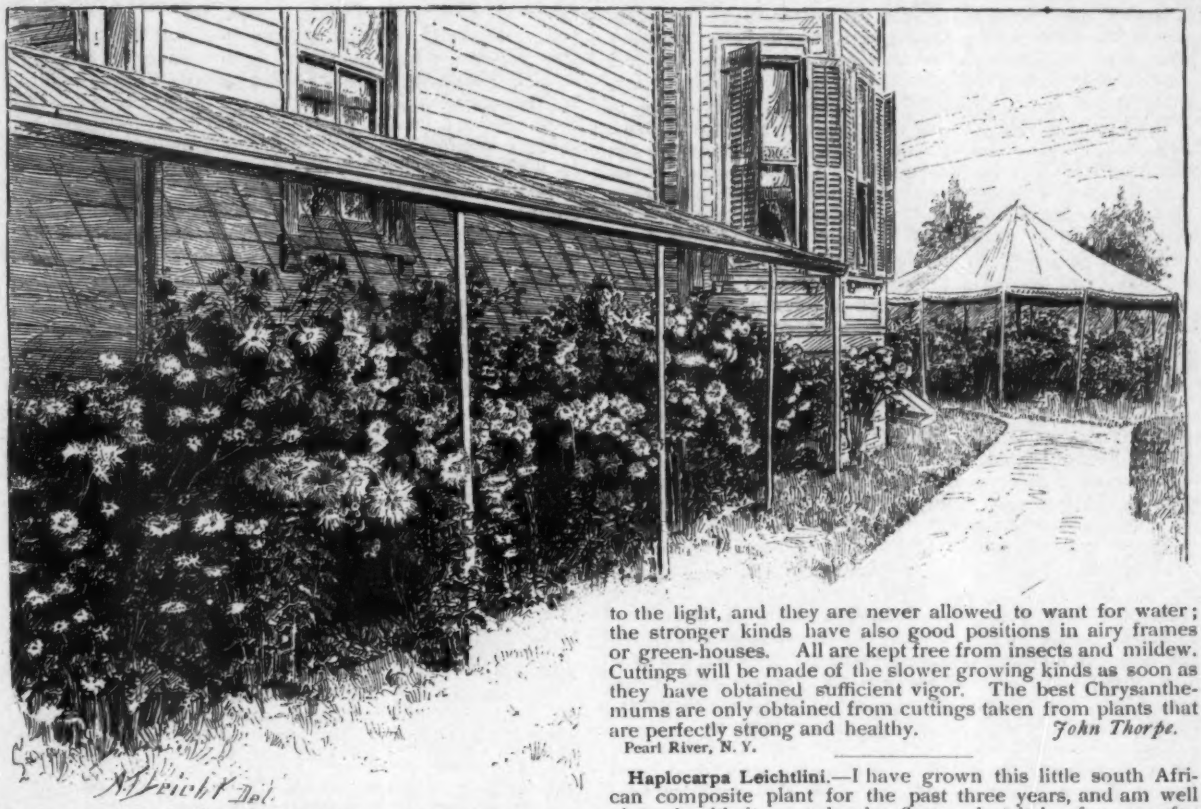
IN estimating the relative value of various species and varieties of Ferns for use in a cut state, some special qualities are to be considered, the more important ones being beauty, durability and rapidity of growth. It is also desirable that they should be easy to propagate, so that the stock can be quickly renewed when the plants become weakened by frequent use of the knife. In beauty, few Ferns, if any, excel the Adiantums, taken as a group, and several of the varieties, notably *A. Wiegandi*, last a long time when cut.

But though this variety makes a very pretty plant, it has not the elegance and grace of *A. cuneatum*, *A. cuneatum grandiceps* or *A. gracillimum*, the latter having a most beautiful effect when used with skill in arrangements of white or

pink flowers, its delicate pinnæ appearing like a green lace-work among the flowers.

In addition to the above-mentioned species and varieties, *A. decorum* may be used as a substitute for *A. cuneatum*, if more convenient to do so, its strong fronds of similar general outline being tough enough to stand considerable exposure. In choice arrangements, those of Orchid flowers, for instance, *A. Farleyense* is almost indispensable. The varieties named are probably the most useful of this family in general cultivation, and all are easily propagated from spores, with the exception of *A. Farleyense*, which is readily increased by division.

The next in order for general usefulness are several species of Pteris, most of which are of the easiest cultivation, while for lasting qualities they are decidedly some of the best. *Pteris Cretica* and its varieties magnifica and albo-lineata keep in good condition for several days, in water, while *P. serrulata* and several garden forms of this well-known sort are very



A Garden of Chrysanthemums.—See opposite page.

pretty, and capable of standing a great deal of rough usage; while if large fronds are needed for any special purpose, *P. argyæa* and *P. tremula* are among the best varieties to furnish them, though they will not stand quite so long as those of *P. Cretica* and *P. serrulata*, and they are also rather more brittle.

After the Pteris may be placed *Onychium Japonicum* and *Davallia tenuifolia striata*, both of which are excellent Ferns for either florists or amateurs, though they do not recover from a severe cutting in so short a time as plants of the genus first named, and in the case of the Davallia it is also somewhat more difficult to raise a quantity from spores. Another Fern frequently seen and very useful at times is *Microlepis hirta cristata*, its long and graceful fronds being seen to advantage in large baskets and similar arrangements. I lately saw a pleasing effect produced by the use of a few fronds of Microlepis in a basket of Chrysanthemums, this being one of the few Ferns which may safely be used among these flowers without seeming out of place. Some of the Nephrolepis are also very good for our purpose, *N. exaltata* and *N. davallioides furcans* being among the most suitable on account of the strong texture of their fronds and their rapid and persistent growth. Much might be said of the good qualities of the Gleichenias for cutting, but in many establishments the plants are not large or numerous enough to warrant a free use of the knife; but where a few fronds of this handsome species can be spared for decorating, it will be noted that fronds of *G. dichotoma*, when placed in water, stand the test of a warm room for as long a period as those of any Fern so used, and from their peculiarly formed growth are sure to attract attention and commendation.

Philadelphia, November 23d. *W.*

Chrysanthemums.—It often happens after Chrysanthemums have done flowering that they are stowed away either under green-house benches, where there is but little light, or in cellars where there is less, or are left out in the weather to struggle as best they can with the elements. Good Chrysanthemums cannot be had next year from stock subjected to such treatment. Growers who aim at fine plants and fine flowers are now giving their stock-plants the best attention; the weaker kinds are placed in a cold green-house or frame, close to the light, and they are never allowed to want for water; the stronger kinds have also good positions in airy frames or green-houses. All are kept free from insects and mildew. Cuttings will be made of the slower growing kinds as soon as they have obtained sufficient vigor. The best Chrysanthemums are only obtained from cuttings taken from plants that are perfectly strong and healthy. *John Thorpe.*

Pearl River, N. Y.

Haplocarpa Leichtlini.—I have grown this little south African composite plant for the past three years, and am well pleased with it as a border flower, but it is of no use for cutting, as its blossoms do not stay open after they are cut and removed to an ordinarily lighted room. The plants are stemless, and form rosettes of Dandelion-shaped leaves, seven to nine inches long, glossy above and thickly covered with white, closely-pressed silky down beneath. The flowers are two to three inches across, golden yellow backed with purplish-brown, showy and borne singly on scapes ten to thirteen inches high. They shut up at night and in dull weather. The plant is not hardy, and ten degrees of frost will kill it outright. Although a perennial, it seeds freely and the seeds germinate readily, and if sown in spring they give blooming plants by midsummer, and these plants continue to bloom uninterruptedly till cut down by November frosts. *William Falconer.*

Glen Cove, L. I.

Tea Rose, Madame Hoste.—This is a Rose of great promise, and judging from our own experience, it will take rank with the most valuable of its class. It possesses a good constitution, is strong, but not coarse, in growth, and has abundant dark green foliage. The bud is larger than that of Perle des Jardins, and of rounder, yet finely pointed, form, while its beautiful lemon tint is most pleasing. Not the least of its charm is its beauty when fully open. Within the past few days flowers have developed here which rival the largest and most

perfect Maréchal Neils. There is little doubt that it will prove a valuable bedding variety; and as to its suitability for forcing under glass there can no longer be a question. M. Guillot, to whom we are indebted for this magnificent variety, has once more placed the lovers of fine Roses under grateful obligation to his house.

Richmond, Ind. *E. G. Hill.*

The Forest.

The Forest Vegetation of North Mexico.—X.

IF we continue, over the plains and amongst the foot-hills bordering them, our examination of the frutescent species of Chihuahua, we shall find sparsely scattered through the chaparral several shrubs of interest in one regard or another—*Cassia Wislizeni*, Gray, in small clumps about six feet high, for its abundant yellow bloom shown in April, and again after the midsummer rains have refreshed the country; *Anisacanthus insignis*, Gray, a slender bush three to six feet high, for its showy light purple flowers, which appear on the leafless branches in March; *Zizyphus lycioides*, Gray, growing in clusters six or eight feet high, for its burden of blue-black berries, long persisting; *Acacia constricta*, Benth., here merely a shrub with tall, slender stems, for the delightful fragrance of its flowers, growing in little yellow heads strung on the virgate branches, which throughout several months of the year betray to all passing near the presence of this shrub; *Lippia lycioides*, Steud., a tall and tender shrub, often supported by other species, for a similarly sweet and long continued perfume; *Dicraurus leptocladus*, Hook, *f.*, a low, soft bush, for its feathery panicles of fruit; *Ephedra trifurca*, Torr., two to ten feet high in clumps, for its rush-like, leafless branches; and *Ephedra pedunculata*, Engelm., a vine-like plant climbing amongst shrubbery, for its numerous scarlet berry-like fruits.

On the extensive sandy plain, in some parts shifting sand-hills, lying south of Paso del Norte, *Bigelovia pulchella*, Gray, *Artemisia filifolia*, Torr., and *Polomintha incana*, Gray, are scattered as small shrubs amongst clumps of Mesquite. In *arroyos* of the plains *Brickellia laciniata*, Gray, and *Hymenoclea monogyra*, Gray, are woody-stemmed plants a few feet in height. A wild Grape, *Vitis Arizonica*, Engelm., bearing clusters of a few small berries, grows on river banks. Two species of Baccharis, *B. angustifolia*, Michx., and *B. glutinosa*, Pers., border streams or cover their higher gravel. The Osier-like stems of these two common plants, harvested before the resin-covered leaves fall, and bound into bundles, serve as fuel for burning tiles, lime, etc. *Senecio salignus*, DC., and *Varilla Mexicana*, Gray, are woody composites of the lower valleys, conspicuous in March for profuse yellow flowers.

The low shrubs which occupy the mesas of thin soil on a cemented foundation, previously described, are chiefly *Larrea Mexicana*, Moric., and *Flourensia cornua*, DC., the leaves of both covered with resin as a protection against drought, and the following, whose leaves have a velvety covering, serving the same end—*Parthenium incanum*, HBK., *Lippia Wrightii*, Gray, *Buddleia marrubiifolia*, Benth., with round heads of orange-colored flowers, and *Leucophyllum minus*, Gray, whose deep purple flowers contrast well with its silvery leaves. Quite at home amongst these, and overtopping them, we notice *Rhus microphylla*, Engelm., six or eight feet high, and attractive with its scarlet fruits, and a depauperate state of *Acacia constricta*, Benth.

Approaching finally the foot-hills by the *arroyos*, strewn with gravel and boulders, through which their torrents rush down to the plain, channels left dry throughout most of the year, however, we pass a straggling growth of shrubs, the acquaintance of many of which we have already made upon the plain. From the *arroyos* we follow into the gulches and cañons others, however, which better love the hills,—*Morus microphylla*, Buckl., ten to fifteen feet high, of interest as yielding fruit, though small and barely edible, perhaps the best wild fruit to be found; *Ptelia angustifolia*, Benth., five to twelve feet, of slender, irregular habit; *Garrya Wrightii*, Torr., six feet high, a leafy evergreen; *Berberis trifoliolata*, Moric., a Berberry with glaucous, pungent leaves and the usual scarlet berries; *Ungnadia speciosa*, Endl., loaded in earliest spring with pink flowers; *Rhus virens*, Lindh., approaching arborescent proportions, with shining evergreen leaves, pink flowers and scarlet fruits; *Lonicera albiflora*, T. & G., a white-flowered Honeysuckle; *Cotoneaster denticulata*, HBK., six to eight feet high, and loaded with rosy-white fruits of the size of Huckleberries; *Forestiera phillyreioides*, Torr., six to ten feet high; *Mimosa prolifica*, Watson, four or five feet; *Rhamnus Californica*, Esch., fifteen feet; and *Colubrina Texensis*, Gray, ten to fifteen feet high.

Without the cañons we find preferring more open situations, on the lesser hills, *Eysenhardtia spinosa*, Engelm., one to two feet; *Tecoma stans*, Juss., three to six feet, brilliant throughout the growing season with shining yellow flowers; *Mimosa dysocarpa*, Benth., and *M Pringlei*, Watson, both pretty, with a profusion of purplish flower clusters; *Mortonia scabrella*, Gray, two or three feet; *Adolphia infesta*, Meisn., spiny and almost leafless, in broad clumps, but a foot or two high; that strange plant, *Fouquiera splendens*, Engelm., with virgate stems ten to fifteen feet high, several spreading from a common crown and terminated by a cluster of flaming red flowers; and *Vanquelinia corymbosa*, Corr., a beautiful shrub of a few feet in height with compact, evergreen foliage and corymbs of white flowers; on the upper slopes and summits—*Ceanothus Greggii*, Gray; *Cowania Mexicana*, Don, three to six feet high; *Cercocarpus parvifolius*, Nutt., ten feet; and *Fendlera rupicola*, Engelm. and Gray.

In cañons of mountains about the Laguna country were found, besides many of the above,—*Acacia crassifolia*, Gray, *A. Berlandieri*, Benth., and *A. anisophylla*, Watson, *n. sp.*, *Bauhinia uniflora*, Watson, *n. sp.*, showy, with purple flowers, and *Randia Pringlei*, Gray, with white fragrant flowers, all about fifteen feet high, and doubtfully to be included among shrubs. *Hoffmanseggia fruticosa*, Watson, *n. sp.*, and *Machaonia Pringlei*, Gray, *n. sp.*, a lovely evergreen with white flowers, were but three to five feet high.

Charlotte, Vt. *C. G. Pringle*

Correspondence.

An Appeal for Pretty Plants.

To the Editor of GARDEN AND FOREST:

Sir.—I am a vulgarian. I like pretty plants. I also like to own them. I like to see them growing on my little grounds. I like them just as much if they come from far away as if they were first found near at hand; and if they are very unlike what all my neighbors have, I love my pretty plants the better for that. I enjoy gathering around me handsome shrubs and trees which I couldn't otherwise see short of a horticultural park or a big arboretum. To my low taste it isn't the end of all perfection in planting to secure "repose," or general sleepiness, or so refined a commonplace that nobody will notice whether anything is growing near my house. I rebel against Mr. Olmsted and you, and only a revolt will ease my mind and temper when you go to laying down those austere rules of landscape-gardening. What! May some high artist come along, and order out of the ground my pluming Pampas Grass and striped Eulalias, my delicious Japanese Maples and the Paulownia which I cut down every year that it may yield me leaves more than two feet across, my Hydrangea Grandifloras, all in a bouncing bed, my dainty blue Spruce and delicate Deodar Cedar, my Retinisporas, too various to describe in a letter of protest, and my Irish Yew, black as the Sun-ray Pine is yellow? Shall he make me believe that all the people who look over my fence as they go by and who say this lawn is the neatest thing in the neighborhood, lack good taste for admiring a plain man's collection of all the fine things he could find a nice place for and make grow out-of-doors? Why may I not think a dark Austrian and a light Scotch Pine set each other off as well in Pennsylvania as if they were planted t'other side of the sea? Why are not that rich Nordmann Fir and that bland Nobilis as charming side by side as if one were thriving unseen in the Crimea and the other were hidden away in the Sierras?

It's of no use to go on. I am too dull to understand why pretty things cease to be pretty when they become strikingly pretty. I think you have hit it with regard to the glaring calico beds of Coleus. Some sense ought to be shown in putting colors together; but green is not the only color in trees worth looking at by vulgar eyes. If you will make a pilgrimage far out Chestnut Street, in Philadelphia, as I do two or three times a year, just to see a purple Beech, purple as any bedding plant, big as a house, and round as a Cabbage, with a cut-leaved, Weeping Birch for one neighbor and a Cedar of Lebanon hard by in a corner, I am sure you would enjoy these rare beauties which, as a critic, you condemn, because they are not commonplace and easy to overlook. Make your high-class parks as prim and plain as you will, but pardon common folk for putting pretty things where they can see them grow and where they can be proud of them. *Simple Simon.*

Chester, Pa.

[Our correspondent has entirely failed to comprehend the scope and aims of this journal if he imagines that we do not cordially share his admiration for beautiful plants. All those which he mentions are handsome and appropriate objects in a garden or upon a lawn adjacent to a dwelling-house; and if he has succeeded in grouping them so as to bring out all their beauties with the same taste and knowledge which he has displayed in their selection, his neighbors have good reason for stopping to look at his garden. But if he has succeeded in grouping them in this manner he may feel very sure that—apparently without his knowledge and perhaps even against his will—he has secured an effect of "repose," of harmony, of variety in unity, although not necessarily of "sleepiness" or commonplaceness. The mistake he makes, and it is one of very general occurrence, is that he confounds the treatment of a yard or small garden in a thickly settled, or comparatively thickly settled, region, with landscape-gardening—that is, with the development of surfaces, the treatment of water and the arrangement of plants in such a way as to produce living pictures on a large scale, which are successful as they imitate or surpass natural effects. When a small garden or a small lawn forms part of a wider and more extended picture it demands a treatment which shall be in harmony with its surroundings, or with the views, natural or artificial, which can be seen from it. But, as a general rule, a small garden must be treated as a unit and independently of its surroundings; and in such a garden plants which would appear inappropriate and out of place in a large landscape picture, are not only appropriate, but the most desirable plants to use. A garden exists largely for the sake of its plants; with a park or landscape the reverse is the case—the plants exist for the sake of the picture as a whole. But even in the smallest garden an over-accumulation of trees and shrubs and flowers, a confusion of incongruous forms and colors, a fussy, heterogeneous, disorderly arrangement can never be satisfactory, for under such circumstances the plants themselves cannot appear to the best advantage. If our correspondent's garden is as pleasing in effect as we gather from his words, its arrangement is orderly, no matter how unsymmetrical and informal it may be; forms and colors are well contrasted; each plant helps instead of hurting the beauty of its neighbors, and therefore the effect is a reposeful one. That it includes many striking elements does not alter this fact—some of the finest, most complete and reposeful works of art that the world can show contain very striking elements. The whole question is not one of elements, but of their use, and all we have tried to impress upon our readers is that the more striking the material, the more difficult it is to use it really well, and that material which is not striking is the safest to employ. Given a due degree of knowledge and taste there is no reason why all the plants mentioned by our correspondent, and many more besides, cannot be planted in such a manner upon a small piece of ground as to produce an attractive and interesting garden. The development of these plants will afford new pleasures or new disappointments every year; and the man who plants and maintains such a garden should be considered a benefactor to the community in which he lives. It is a collection of plants, however, which he creates, and not a landscape picture. Each is valuable and interesting, and each is capable of affording real and lasting pleasure; but they must not be confounded, and the man who can successfully plant, and so make the most of his door-yard, must not think that he is a landscape-gardener.—ED.]

To the Editor of GARDEN AND FOREST:

Sir.—In striking contrast with the vicinity of Lebanon, Pennsylvania, where the portable saw-mill, at so much per acre, has devastated the country of its most valuable trees, I observed during a recent visit to Dauphin County, Pennsylvania, that most of the mountain land throughout an extensive region in that part of the state is still covered with forests. As it is too rough and steep for cultivation, it should, of course, be kept permanently wooded. The soil is good, and it originally produced a heavy growth of Chestnut Oak, White and Black Oak, Hickory, Walnut, Ash and Chestnut trees. Most of this was cut off thirty or thirty-five years ago, but where the land is not burned over or pastured the trees are rapidly reproduced. There are many springs and small streams in this woodland region, and these are of great value, not alone to the few farmers living in the small valleys, but their steady flow is also of importance to the dwellers along the rivers which carry these waters to the sea. Some plan for taking care of these woods ought to form part of the education of the people of this part of the country. They are hard-working, sensible men and women, with a great deal of character, most of them poor. How can they be reached and taught what they need to know and think of and practice in regard to the forest interests of their region and the best ways of managing their own woodlands?

Philadelphia. *M. B. C.*

To the Editor of GARDEN AND FOREST:

Sir.—Owing to unusual rains in August and September, and the continued warm weather, much of the vegetation here has put on the appearance of spring. The Elms on the east and south sides of the hills are in full bloom. The Japan Quince and Forsythia are full of scarlet and yellow blossoms. The Daffodils, single Hyacinths, Jonquils and Flower-de-Luces are several inches above ground. The perennial Sweet Pea has put out fresh sprays; their delicate, beautiful green makes a lovely addition to cut-flowers for the table. I have just gathered from my garden, besides late Chrysanthemums, blue (sweet) Violets; Louis Philippe, Bougère, Lamarque, Duchesse Brabant, the fragrant, old-fashioned "Blush-cluster" and pink daily Roses; Dwarf Iris and Woodbine, of which we have a variety that is nearly a perpetual bloomer. I have gathered blossoms from it as late as Christmas Day and as early as February 15th. The trumpet-shaped flowers are scarlet on the outside and orange on the inside.

College Grove, Tennessee, November 29th. *Alice W. Rucker.*

Recent Publications.

The Origin of Floral Structures through Insect and other Agencies. By the Rev. George Henslow, Professor of Botany, Queen's College. 349 pages, and numerous illustrations. D. Appleton & Co., New York, 1888.

The author has felt impressed by what he regards as the inadequacy of the theory of Natural Selection to account for the diversities of form and structure in the vegetable world.

As generally understood, the Darwinian theory recognizes (1) the fact that organisms vary from generation to generation, the descendant differing more or less from its progenitors in some way or other; (2) that more descendants are produced than can, under existing circumstances, possibly come to maturity, and (3) that of the variant forms, those will, of course, stand the best chance of coming to maturity which are best fitted to meet their surroundings. In other phrase, Nature selects the fittest, and these survive. But the question naturally arises, may not the surroundings have played an important part not merely in selecting advantageous variations, but in originating all variations? This question has presented itself to the minds of many investigators in the Old World, and it has been thoughtfully treated by Cope, Hyatt and Ryder in this country. This is the inquiry which Professor Henslow places before the reader in the work under consideration, and he employs in some cases the terms which had been previously used by the American students above mentioned, whose works were doubtless unknown to him.

At the outset we will say that the book appears to be a useful contribution to the subject. It is attractive and readable throughout, but to us it has been unsatisfactory, or, rather, unsatisfying. The lack does not arise so much from the method of reasoning or of statement of observed or cited facts, as from the author's use of terms. This may be illustrated by a reference to the beginning of the book. After assuming the ideal type of floral structure, he proceeds as follows: "We may at once consider the 'Principles of Variation,' as I propose to call them, in accordance with which the different members of flowers can be altered." "There are five principles which require special consideration. They are usually designated by the terms number, arrangement, cohesion, adhesion and form." "The above five *principles* constitute the most important, *in accordance with which Nature has brought about* the infinite diversity which exists in the floral world. There are minor *distinctions* hereafter to be considered, such as colors, scents, etc.; but they are of less importance in investigating the causes at work which have evolved specific and generic differences amongst flowering plants." This sentence, in which we have placed italics, appears to indicate that the author makes no clear discrimination between a principle and a distinction, since the first is said simply to be more important than the latter. In other words, he employs the term principle to express distinctive character or distinction, and yet having appropriated it for this purpose, as he perhaps had a perfect right to do, makes it do double duty as a law or mode of action "in accordance with which Nature has brought about the infinite diversity which exists in the vegetable world." The author has probably not felt that any ambiguity can arise from such use of terms, but the casual reader and the careful student alike, who take up the book for the first time, will be liable to entertain a distrust which is not wholly warranted. The book ought to do good service in stimulating observation and in exciting intelligent inquiry even among those who are not botanists.

A Catalogue of Canadian Plants. Part IV.—Endogens. By John Macoun. Montreal, 1888.

Another part of this work, being Part I. of the second volume, covering the endogenous plants of British North America, has been issued by the Geological and Natural History Survey of Canada. It is to be followed by two additional parts to be devoted to the Ferns, with the Mosses and Liverworts, and to Lichens, Fungi and Seaweeds. Considerable additions to the knowledge of British American plants have been acquired during the past two years, through collections made on the shores and islands of James' Bay, by Mr. James M. Macoun, a son of the author of the catalogue, who himself spent several months in studying the botany of Vancouver's Island, and by Mr. G. M. Dawson, who devoted the summer of 1887 to exploring that portion of the North-west Territories which is adjacent to Alaska, a journey whose most interesting botanical features have already been described by Mr. Dawson in the columns of this journal. The results of this journey, so far as they relate to the Endogens, are contained in the present volume. Professor Macoun estimates that the entire work, when completed, will contain, including 2,500 cryptogamous plants, the enumeration of about 5,500 species of plants, native and introduced, found growing without cultivation, within the limits of the Canadian Dominion.

Periodical Literature.

The November number of the *Bulletin of Miscellaneous Information*, issued from the Royal Gardens, Kew, contains the usual amount of valuable information relating to economic plants and plant products, which makes this periodical invaluable to all persons interested in economic botany and in tropical agriculture.

The principal articles are upon the Lagos Rubber (*Ficus Vogelii*), from which the following quotations are of general interest:

"The investigation of plants likely to yield the caoutchouc of commerce is being carried out in west tropical Africa by numerous correspondents of Kew. Possibly in no other part of the world is there such a wide field for investigation of this kind, and in recent years a considerable trade in India-rubber has arisen through the exertions of officials and traders who have given attention to this subject. At present the chief rubber-yielding plants on the west coast appear to belong to a species of *Landolphia*. These are climbing shrubs with stems four to six inches in diameter near the ground, but dividing above into numerous branches, which support themselves on the neighboring trees. The rubber of the Gold Coast, known in commerce as Accra rubber, is the product of *Landolphia owariensis*, Beauv. This is probably the best rubber plant in west Africa. The rubber is obtained by cutting off portions of the bark in strips varying in length from three to ten inches. The cuts are made sufficiently deep to reach the latex canals, and soon the crude juice starts out in drops and gathers on the newly-cut surface. The rubber of the *Landolphia* coagulates on exposure to the air, and requires no other preparation other than rolling it up into balls. 'A quantity of the milk is first dabbed on the fore-arm of the operator, and being peeled off, forms a nucleus of the ball. This nucleus is applied to one after another of the fresh cuts, and being turned with a rotary motion, the coagulated milk is wound off like silk from a cocoon. The coagulation takes place so rapidly on exposure to the air, that not only is every particle cleanly removed from the cuttings, but also a large quantity of the semi-coagulated milk is drawn out from beneath the uncut bark, and during the process a break in the thread rarely occurs.'

"Another method of collecting west Africa rubber is described as follows: The blacks wipe off the milk with their fingers and smear it on their arms, shoulders and breasts, until a thick covering of rubber is formed. This is peeled off their bodies and cut into small squares, which are then said to be boiled in water. In European markets such rubber appears in more or less agglutinated masses of small cubes.

"The investigations undertaken by Mr. Millson in west Africa are described in the following notes:

"'In nearly all the native villages in the western district of the Colony of Laros, and, I believe, throughout the colony and the interior, are to be found large spreading trees, which have been planted for shade in the market places, streets and compounds. These trees are of the Fig family, and are called by the natives Abba. I have measured a tree of this species of the age of thirteen years, and found its girth, at three feet from the ground, to be six feet four inches, and its height to the branches twelve feet, while its total height could not be less than fifty or sixty feet, and its foliage area a quarter of an acre. A tree of this size ought to give large quantities of milk if tapped at the right time of the year. Although it was in fruit when I tapped it, and the season being very dry, was in every respect unsuitable, yet the milk exuded in large drops, and flowed for a considerable distance down the trunk. Three quarts of milk were extracted from this tree without injuring it in any way, and I have little doubt that at any time between the months of July and February from four to five gallons could have been obtained with but little trouble. The trees, however, should only be tapped on alternate years, so as to leave time for a fresh growth of bark to replace that which has been removed. It is difficult to form an accurate estimate of the percentage of dry rubber that would be yielded by a gallon of milk, but I have reason to believe from previous experiments on Central American rubber trees (*Castilloa elastica*) of similar richness of milk, that each gallon should give about three pounds of India rubber. The value of the rubber produced depends largely upon the care with which it is prepared, and I have reason to believe that the milk of this species, at least, of the "Abba" tree, can be made to give an excellent sample.

"'Should the above facts be established, it becomes evident that plantations of the "Abba" tree would be a highly profitable investment. It is planted by the simple method of cutting off a branch and pushing it into the ground, and on account of the facility and rapidity with which it is raised, the natives used it largely for fence-posts. From the trees already in full growth in the bush and towns a considerable export trade could be readily established, and careful planting would develop this trade to almost an unlimited extent.'"

In the article upon Liberian Coffee at the Straits Settlements it appears that "as a commercial article Liberian Coffee has not hitherto proved so valuable as was at one time supposed, and the cultivation, though widely distributed, has not become general in any part of the world. There are, doubtless, good reasons for this. It has been found, for instance, that the "cherries" of Liberian Coffee do not become soft and pulpy when ripe, but remain hard and fibrous. Hence it has been found difficult to husk the beans, as the machinery found suitable for preparing Arabian Coffee is not applicable to the Liberian Coffee. Again, the "parchment" skin is tough and woody in the latter, and the labor and percentage of waste entailed in "cleaning" is increased, while the actual market value is lessened. Probably, also, in the cultivation of Liberian Coffee the localities selected for plantations have, in many cases, been subject to long droughts, whereas the species evidently prefers a warm, moist climate, with abundant rains

well distributed through the year. Should the present high price of Coffee be maintained it is not unlikely that the cultivation of Liberian Coffee will prove sufficiently remunerative to warrant further attention being paid to it.

Tea cake is prepared from a species of Camellia (*Camellia Sasanqua*), which "is extensively grown in south China for the production of seeds, which produce a valuable oil, known as *Tea Oil*. The preparation is very simple. The seeds are collected in October or November, dried and taken to the mill, where they are crushed in a circular mortar or trough by a pestle driven through it by water power. The seeds after being crushed are steamed, and then the mass is placed in a powerful press, which expresses the oil. The refuse, after the extraction of the oil, is the article known as *Ch'à tsia ping*. It is produced in cakes weighing, when dry, about three ounces and three and a half pounds respectively. The quality of the two kinds of cake is the same. I am not aware that anything besides the seeds of *Camellia Sasanqua* enters into the composition of these cakes. *Ch'à tsia ping* is used by the Chinese as a hair wash and as soap for cleansing both the person and the clothes. It is also used for eradicating earth-worms from grass lawns. For this purpose the cake is crushed and boiled. The decoction is then diluted and poured on the grass, when the worms come to the surface of the ground. As a rule, the small worms die, but the larger ones after a time recover. After being picked up from the grass the worms are often given to fowls and ducks, which devour them readily, and apparently thrive on them, experiencing no inconvenience from the effects of the *Ch'à tsia ping* with which the worms were killed."

There are articles on the Demerara Pink Root (*Spigelia anthelmia*), a plant possessing powerful drastic properties, which renders it exceedingly dangerous for animals to graze upon the ground where this plant grows. On the food grains of India, with an analysis of the fruit of *Croix gigantea*. On the Yoruba Indigo (*Lonchocarpus cyanescens*). On the Trinidad Ipecacuanha (*Cephaelis tomentosa*), from which it appears that "the demand for the official Ipecacuanha is steadily increasing, while the supply of the drug is either stationary or gradually becoming scarcer. Inquiry is, therefore, naturally directed to plants that may possess similar properties, in the hope that they may serve to supplement or replace the drug hitherto excusively in use."

There are also articles on the Treatment of Vines in France; on Huskless Barley; and a report upon a series of trials of the methods of preparing Ramie fibre, recently undertaken in Paris under the auspices of the French Government.

We cannot find space for more extended quotations for this issue of the *Bulletin*, which is certainly one of the most useful of the various publications prepared in the Royal Gardens.

The last number of *Hooker's Icones*, which appeared in October, completes the eighth volume of the third series, or Volume XVIII. of the entire work.

Among the plants figured in this issue, which are interesting from other points of view than that of pure science, is the curious *Musa proboscidea*, *t.* 1777; a Banana from the hills of Ukami, in tropical Africa, about 100 miles inland to the west of the Island of Zanzibar, the long axis of the inflorescence hanging down, as shown from a photograph, to about one-third the height of the stems above the ground. *Parnassia Faberi*, *t.* 1778, is a minute, but very attractive, species, from Mount Omei, in central China, where it was discovered by the Reverend E. Faber at an elevation of 4,500 feet. *Ilex macrocarpa*, *t.* 1787, is a stout shrub or tree which sometimes attains a height of fifty feet, with large, deciduous leaves and black fruits. It is one of Dr. Henry's interesting discoveries in the Ichang gorge of the Nanto'o Mountains, and was sent also from the Kwangtang Province by C. Ford. It may be expected to be valuable in cultivation. And this is true, also, of *Lindera fragrans*, *t.* 1788, another discovery of Dr. Henry's, who remarks, in regard to this elegant plant, that "the leaves are pounded in milk in the glens, and the powder mixed with that got from the roots of Biota, . . . in a similar way; it is used for making Joss-sticks — sticks of incense used in religious worship." The flowers are fragrant.

Primula Faberi, *t.* 1789, is an addition to the series of Chinese Primroses which are among the most important of the Abbé Delavay's recent discoveries in south-eastern China. It is distinguished by the conspicuous involucre, in which the calyxes of the stout-pediceled flowers are almost hidden. *Lonchocarpus cyanescens*, *t.* 1791, a native of the Yoruba country, a region north of Abbeokuta, is the plant which produces the so-called "Yomba Indigo," which is prepared by pounding the young leaves to a black, pasty condition, and then made up into balls for market. The dye is a fine deep blue in color and very permanent.

Cadrania triloba, *t.* 1792, is a member of the family to which the Mulberry belongs. It is the "Silkworm Tree," and is known in China, where it is quite widely distributed, as the "Tsa" tree. Dr. Henry reports "that it is common about Ichang, where it is considered to be as good for silkworms as the Mulberry, but it is not used so long as Mulberry leaves can be got, because the tree is thorny and it is troublesome to pick off the leaves. It is hence given chiefly to adult silkworms, and, as Mulberry leaves soon become finished, it is much used." The tree attains a height of twenty feet. The leafy shoots, more especially those from near the base of the plant, are often armed with strong, stout, axillary spines.

Achras Bahamensis, *t.* 1795, a native of the Bahamas, and No. 3837 of Baron Eggers' recent Bahama collection. Mr. Baker finds it "very distinct from the well-known *Achras Sapota*, not only in the leaf, but also in the structure of the flower, having the segments of the corolla twelve in number instead of six, so that unless it be made a new genus, the character of Achras will have to be materially enlarged." We venture to suggest that this plant is the *Mimusops Sieberi* of A. De Candolle, a common tree of semi-tropical Florida and of the West Indies—a view which is supported by the plate itself, which very well shows the six-parted corolla, with the two appendages at the base of each division, and the short, triangular and nearly entire staminodia alternate with the lobes of the corolla, which characterize Mimusop. The figure in Catesby's "Natural History of Carolina, Florida and the Bahama Islands," to which Mr. Baker calls attention, displays the fruit accurately enough, and there is another figure, although a less satisfactory one, in Nuttall's *Sylva* (iii., 28, *t.* 90), in which the fruit of some other plant seems to have been substituted for that of the Mimusops, which is depressed-globular, about one inch in diameter, dark russet brown when ripe, and barely edible.

Sir Joseph Hooker figures and describes, in this part of the *Icones*, a number of Indian Orchids, principally belonging to the genus Oberonia, a fact which leads us to hope that his examination of Indian plants for the "Botany of India" is nearing completion, and that the final parts of this work, one of the most important of the great floras to which the studies of many years of his life have been devoted and which no hand but his can so well take up, may soon be expected.

Notes.

The Eulogy of Richard Jefferies, which was reviewed in this journal last week, is published in this country by Messrs. Longmans, Green & Co.

The thirty-first annual meeting of the Missouri State Horticultural Society, held on December 5th at Nevada, was exceptionally interesting. More than one thousand plates of fruit were on exhibition, beside an abundance of choice vegetables and flowers.

In the *Popular Science Monthly* for December will be found a translation in full of the Marquis de Saporta's interesting article on "The Origin of Forest Groupings," to which we called attention some months ago, when it was published in the *Revue des Deux Mondes*.

Mr. Weiger, of the Botanic Gardens in Adelaide, writes to *The Garden* (London) describing one of the finest existing specimens of "Fortune's Rose." It stands near the fountain in the garden, was planted twenty-six years ago, and has received no special care, although copiously watered in the dry season. It is a veritable tree, being about twelve feet in height and the same in diameter, while at a foot above the ground, where it breaks into several branches, the stem measures a yard in circumference.

Dr. Hildebrand, who recently published in Wildeman's *Annalen der Physik und Chemie* the results of his investigations into the action of moisture upon different kinds of wood, says that more care than is now taken should be exercised in choosing wood for measuring-rules. Mahogany and oak are frequently used for this purpose, but are entirely unfit for it; maple, fir, beech and linden woods being far preferable. With no wood, however, can absolute stability, and therefore accuracy, be depended upon, even though polish, oil or lacquer be applied to its surface. Air, saturated with steam, will penetrate all but the very best lacquer, and even ivory does not entirely resist its action.

The Pecan nuts now sold in some retail shops are specially prepared for the market. Large nuts of uniform size are selected and placed in an iron cylinder, which is made to revolve by machinery. The nuts are thus made perfectly smooth by attrition, a uniform dark brown color being given to them by putting into the revolving cylinder some coloring substance, the composition of which is still a secret of the trade.

A remarkable Horse-Chestnut to be growing so far north stands at Skene House in Scotland, one of the seats of the Earl of Fife. It is fifty-eight feet in height and its trunk girths thirteen feet above the swell of the roots, while the branches, in spite of the fact that they were cut back when the tree was younger, droop quite to the ground, inclosing an open area ninety feet in greatest diameter. It stands about 350 feet above the sea level in a soil of deep loam resting on gravelly clay.

It is well known that very few Ferns of any commercial value have been left in Epping Forest or in the other woods around London. According to *The Garden*, however, no mercy is shown to these plants, even in remote country districts. A few years ago Hart's-tongue Ferns were growing in abundance on the old wall which formed part of the ruined Abbey of Rievaux, in Yorkshire, and they added as much beauty to that picturesque pile as did the Ivy that had crept in through the windows. Last year every plant was carted away to be sold in the streets of the large towns.

Mr. J. G. Baker describes in a recent issue of the *Gardeners' Chronicle* a new Lily collected by Dr. Henry, to whom it is dedicated, in the mountains of Ichang, in western China. *Lilium Henryi* "in general habit most resembles *L. tigrinum*, but the fully developed leaves most recall those of *L. auratum*, and the narrow perianth segments those of *L. polyphyllum*." The flowers are yellow, the base of the perianth marked with minute red-brown spots, three to three and one-half inches long, and borne in a lax corymb sometimes a foot wide, consisting of from four to eight flowers. This interesting plant, and its geographical neighbor, *Lilium Davidi*, are still to be introduced into gardens.

We are indebted to the Reverend John E. Peters, of Mays Landing, New Jersey, for a seasonable note concerning some fine groups of Holly trees, which are remarkable even in that region famous for the beauty of its forest trees. The trees stand on the border of an "old field," just where the high ground falls away to the swampy border of a creek, so that abundant sunshine, a light soil and a full supply of water give them every needed condition for the best growth. They are not of exceptional size, but they stand in distinct clusters, each of pyramidal shape, and since their lower branches are unusually thick and come quite to the ground, their beauty is distinct and striking. The first group consists of five trees, with a circular base thirty feet in diameter and twenty-five feet high, while the largest tree is only nine inches in diameter. Many trees of greater height and girth are found near by, but none of them approach these groups in beauty. Last year the Hollies bore few berries, but now the bright red fruit fairly illuminates the rich, dark foliage. Complaints are heard from other places that the finest Hollies have been mutilated to supply distant city markets with Christmas green. It is to be hoped that the Mays Landing trees will be saved from such an untimely fate.

Some of the most venerable Oaks in England stand in the grounds of Holwood House, in Kent, a property which now belongs to Earl Derby, but was formerly owned by William Pitt. One of these trees is called the Wilberforce Oak, because Pitt and Wilberforce were seated beneath it when the latter first divulged his intention to bring forward a bill for the abolition of slavery. At five feet from the ground its stem measures eighteen feet three inches in circumference, while its height is forty-two feet, and the spread of its branches fifty-one feet in diameter. The centre of its trunk is hollow, but the shell is still sound and well covered with bark, and the tree bids fair to last for many years, as the greatest care is now bestowed upon it. Not far away from it stands a similar tree, called Pitt's Oak, which at a yard from the ground girths twenty feet one inch. Like its companion, it is not tall, but has enormous branches, diverging at a height of about eight feet, and a hollow stem. A third example girths nearly twenty-two feet. All these Oaks are of the variety called *Quercus robur pedunculata*. A picture of the Wilberforce Oak, with the stone seat erected to commemorate the historic interview, was recently given in *The Garden*, and various other remarkable trees were noted as existing at Holwood—among them two very large Cork Oaks (*Q. suber*), and an Evergreen Oak (*Q. Ilex*)—the Ilex tree familiar to all travelers in the south of Europe—the circumference of which at two feet from the ground is nearly twelve feet.

Earnest attempts are being made in France to further the planting of fruit-trees instead of ordinary shade trees along the public roads. In Germany the practice is very widespread, and has been very remunerative, the sale of the fruit proving more profitable than the sale of the wood of timber trees. In the vicinity of Mulhouse, says the *Revue Horticole*, the Cherry-trees planted by the roadsides have, from their earliest crop, paid the expenses of their purchase and maintenance. Every visitor to Suabia remembers the Plum-trees, and every visitor to Saxony the Cherry-trees, which line all the roads. As there are so many of them the loss from petty thieving is not serious; and, moreover, the crops are sold as soon as the fruit is set to private persons, who take measures for their protection. When they are ripe those at a distance from the towns are gathered for the market, while in the neighborhood of large places a multitude of booths are erected under the trees, and the whole population goes out on pleasant afternoons to eat the fruit on the spot. In Japan it is the blossoming season of the fruit-trees which draws forth the dwellers in cities; but the inhabitants of the Fatherland seem to get a vast amount of pleasure from thus combining the gratification of the inner man with the delighting of the eye as it rests upon the wide, rich summer landscape.

A correspondent of the *Evening Post*, of this city, writes as follows of Chinese graveyards: "The living occupy the city and the level ground, the dead the hills. No corpse is allowed within the walls of a Chinese city, and without, the vast cemeteries cover the hills, with no fence or other limitation about them. The Chinese family which can afford it builds a 'horse-shoe grave,' or bricked vault, on the hillside, with the end built up in horse-shoe shape. Poorer people stick their dead in shallow graves, on which a small tablet of wood or stone is put. . . . . In the rich alluvial plains, where no uncultivable hills are available for burying the dead, a graveyard resembles very much a white-ant village in Africa. The graves are sugar-loaf mounds thickly clustered together. While John Chinaman pays great respect to the dead, he takes care that they do not appropriate much ground that is of value to the living. The cemetery of a Chinese village in the rich rice-growing districts covers very little ground in proportion to the number of the graves. . . . . In some parts of China one seems to be traveling through cemeteries most of the time. Particularly is this the case in thickly populated districts where the topography is undulating. The ridges where the soil is thin are then the cemeteries, and a rigid spirit of economy has relegated the alignment of the public roads thereto rather than through the fields. In such districts the traveler is in the company of the dead all day long."

In a recent number of the *Bulletin of the Torrey Botanical Club* Mr. W. M. Beauchamp publishes an interesting article on "Onondaga Indian Names of Plants." Omitting the actual names which he prints in numbers, we may quote a few of the appended translations that show a keen sense for the more salient characteristics of trees and flowers and occasionally a touch of true imaginative feeling. The Hemlock Spruce is called "Greens on a Stick;" the Sassafras "Smelling-Stick;" the Balsam Fir "Blisters," from the look of the bark; the Aspen "Noisy Leaf;" the Iron-wood "Everlasting Wood;" the Water Beech "Lean Tree," from the unlikeness of its habit to that of true Beeches, and the Buttonwood "Stockings," probably because of the way in which it sheds its bark. The Mullein is "Flannel" or "Stockings," the Wintergreen "Birch-smelling Plant," the Thorn-bush "Long Eyelashes," from its long thorns, and the Elder, most poetically, "Frost on the Bush," while Peppermint, as expressively, is "That which makes you cold," Poke-weed is "Color weed," and Poison Ivy (from which the Virginia Creeper is not distinguished) "Stick that makes you sore." The Larch is "The Leaves Fall"— which shows that its unlikeness to all other coniferous trees is appreciated; Plantain "It covers the Road," and the Witch Hazel "Spotted Stick." Peach are called "Hairy," Lettuce "Raw Leaf," Chestnut "Prickly Burr" and the Leek "A Queer Onion." The yellow Moccasin-flower is "Whip-poor-will Shoe," the Marsh-Marigold "It opens the Swamps"—surely a pretty name—and Jack-in-the-Pulpit "Indian Cradle," from its likeness to the hooded cradles actually used by the Indians. In many cases the Onondaga names resemble popular English names, as in the case of the Canoe-Birch, the Red Maple, "A Cap," which means a Raspberry, "Three Leaves," which denotes Clover, the Choke-Cherry, the Bloodroot, Catnip, which becomes "Cat-eating Leaf," and the Partridge Berry.